

Amendments to the Drawings

The attached sheet of drawings includes replacement Figure 1 (formalized) and new Figures 2-5.

Attachment: Replacement Sheet

Remarks

The Office Action mailed 27 June 2006 has been received and reviewed. Claims 1-9, 11-39, and 42-44 remain pending. Reconsideration and withdrawal of the rejections are respectfully requested.

The Drawings Objection and Specification Amendments

Applicants note that Figure 1 and its accompanying description submitted in the response filed on May 11, 2006 have been accepted, but that the objection remains in effect.

In response, Applicants are submitting additional Figures 2-5 along with descriptions of those figures (as presented in the "Amendments to the Specification"). Applicants have also include a replacement formalized version of Figure 1 along with the new Figures 2-5.

Applicants respectfully request entry of these amendments and withdrawal of the objection.

The added material (both figures and descriptions) is obtained from U.S. Patent Application Serial No. 10/643,771 (Attorney Docket No. 58449US002), titled DENTAL CROWN FORMS AND METHODS, which was incorporated by reference in the present application as filed at p. 15, lines 23-27 and p. 17, lines 1-3.

More specifically, the additional description being inserted into the present application can be found on p. 5, line 1 to p. 11, line 27 of U.S. Patent Application Serial No. 10/643,771 (with some portions deleted). Figures 2-5 as presented in this response correspond with Figures 1-4 of U.S. Patent Application Serial No. 10/643,771. It should be noted that the figure numbers and the reference numbers in the figures have been changed so as not to conflict with existing Figure 1 of the present application.

Because U.S. Patent Application Serial No. 10/643,771 was incorporated by reference into the present application, Applicants respectfully submit that no new matter is presented in these amendments. Entry of these amendments are, therefore, respectfully requested.

Obviousness-Type Double Patenting Rejection

Claims 1-9, 11-39, and 42-44 were provisionally rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-78 of copending Application No. 10/219,398 in view of Neustadter (U.S. Patent No. 3,565,387). Upon an indication of otherwise allowable subject matter and in the event this rejection is maintained, Applicants will provide an appropriate response.

The 35 U.S.C. §112, Second Paragraph, Rejection

The Examiner rejected claim 18 under 35 U.S.C. §112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention. Specifically, the Examiner alleged that in line 1, “the noncurable” lacks proper antecedent basis within the claims. This is respectfully traversed. Claim 18 depends from claim 16. Claim 16 recites “a noncurable” composition, thereby providing antecedent basis for “the noncurable composition” of claim 18.

Applicants’ Invention

Each of Applicants’ claims recites a dental article form that includes an organic composition (including a surfactant system mixed therein) in the form of a self-supporting structure having a first shape and sufficient malleability to be formed into a second shape. This is describing the organic composition that is used to make the dental article form (as opposed to the hardenable dental material that is placed within the reservoir of the dental article form).

The term “self-supporting” means that the composition is dimensionally stable and will maintain its shape (e.g., preformed shape of a crown form) without significant deformation at room temperature (i.e., about 20°C to about 25°C) for at least about two weeks when free-standing (i.e., without the support of packaging or a container). Preferably, the compositions of the present invention are dimensionally stable at room temperature for at least about one month, and more preferably, for at least about six months. Preferably, the compositions of the present

invention are dimensionally stable at temperatures above room temperature, more preferably up to about 40°C, even more preferably up to about 50°C, and even more preferably up to about 60°C. This definition applies in the absence of conditions that activate an initiator system (if present) and in the absence of an external force other than gravity.

The term “sufficient malleability” means that the self-supporting structure is capable of being custom shaped and fitted, for example, to a patient’s mouth, under a moderate force (i.e., a force that ranges from light finger pressure to that applied with manual operation of a small hand tool, such as a dental composite instrument). Herein, the phrase “malleable” refers to a material that is malleable under conditions in the mouth or that can be comfortably withstood by oral tissue (e.g., temperature and/or oral fluids, including water).

The 35 U.S.C. §103 Rejections

The Examiner rejected claims 1-9, 11, 12, 16-24, 26, 28-35, and 37 under 35 U.S.C. §103(a) as being unpatentable over Kennedy (U.S. Patent No. 4,129,946) in view of Neustadter et al. (U.S. Patent No. 3,565,387) and Ivanov et al. (U.S. Patent No. 4,113,499). The Examiner rejected claims 13, 14, 25, and 36 under 35 U.S.C. §103(a) as being unpatentable over Kennedy (U.S. Patent No. 4,129,946) in view of Neustadter et al. (U.S. Patent No. 3,565,387) and Ivanov et al. (U.S. Patent No. 4,113,499) as applied to claims 1, 16, and 28 above, and further in view of Uthoff (U.S. Patent No. 5,102,332). The Examiner rejected claims 15, 27, and 38 under 35 U.S.C. §103(a) as being unpatentable over Kennedy (U.S. Patent No. 4,129,946) in view of Neustadter et al. (U.S. Patent No. 3,565,387) and Ivanov et al. (U.S. Patent No. 4,113,499) as applied to claims 1, 16, and 28 above, and further in view of Kahn (U.S. Patent No. 3,949,476). These rejections are respectfully traversed.

The combination of the three documents, Kennedy in view of Neustadter et al. and Ivanov et al., does not teach or suggest Applicants’ claimed invention. That is, the combination of the three documents does not teach or suggest a dental article form having all of the recited characteristics. For example, the combination of the three documents does not provide a dental

article form that is both self-supporting and malleable and includes a reservoir that is capable of being filled with one or more hardenable dental materials. Thus, it is respectfully submitted that this combination of documents does not provide a *prima facie* case of obviousness.

Although Neustadter et al. may define a malleable material, Kennedy does not disclose a “self-supporting” dental article form, as defined by Applicants’ specification at page 5, lines 3-7 (“The term “self-supporting” means that the composition is dimensionally stable and will maintain its shape (e.g., preformed shape of a crown form) without significant deformation at room temperature (i.e., about 20°C to about 25°C) for at least about two weeks when free-standing (i.e., without the support of packaging or a container).”). Although the material of the dental crown form of Kennedy (co-polyester plastic) is described as not deforming and slumping as readily as previously used materials (see column 3, lines 36-39), Kennedy describes the need for a “stiffening flange 20” that “substantially strengthens the relatively thin structure of the tooth form, and prevents unwanted deformation of the form during storage and handling” (see column 3, lines 33-36). Thus, although the dental crown form of Kennedy is more “self-supporting” than previously used materials, Kennedy does not teach or suggest a dental article form that is dimensionally stable under the conditions described by Applicants without support of packaging or a container.

Applicants’ self-supporting and malleable dental article form is made of an organic composition that includes a surfactant system mixed therein. Thus, the Examiner cited Ivanov et al. for disclosing a surfactant mixed in a disposable mold form; however, it is respectfully submitted that one of skill in the art would not look to Ivanov et al. for information to assist in making a dental article form. Ivanov et al. is directed to molds used in the foundry industry. Not only is this a completely nonanalogous technology area, Ivanov et al. do not add that which is missing from the combination of Kennedy and Neustadter et al.

The combination of the three documents (Kennedy in view of Neustadter et al. and Ivanov et al.) does not provide a dental article form that is both self-supporting and malleable, made of an organic composition that includes a surfactant system mixed

therein, and includes a reservoir that is capable of being filled with one or more hardenable dental materials.

Furthermore, the other cited documents Uthoff and Kahn do not add that which is missing from the combination of Kennedy in view of Neustadter et al. and Ivanov et al. Thus, it is respectfully submitted that these 103 rejections be withdrawn.

The Examiner rejected claims 39 and 42-44 under 35 U.S.C. §103(a) as being unpatentable over Simor (U.S. Patent No. 3,585,723) in view of Neustadter (U.S. Patent No. 3,565,387), Ivanov et al. (U.S. Patent No. 4,113,499), and Wilson (U.S. Patent No. 5,487,663). This rejection is respectfully traversed.

The combination of the four documents, Simor in view of Neustadter et al. and Ivanov et al. and Wilson, does not teach or suggest Applicants' claimed method, as recited in claim 39. That is, the combination of the four documents does not teach or suggest a method of making a dental article having all the recited steps, including using a dental article form having all of the recited characteristics. Thus, it is respectfully submitted that this combination of documents does not provide a *prima facie* case of obviousness.

Although Neustadter et al. may define a malleable material, Simor does not teach a dental article form comprising an organic composition having a surfactant system mixed therein. Although Ivanov et al. disclose a surfactant mixed in a disposable mold form, Ivanov et al. is directed to molds used in the foundry industry, a completely nonanalogous technology area.

The Examiner acknowledged that this combination of three documents (Simor in view of Neustadter et al. and Ivanov et al.) does not teach or suggest each of the steps recited in Applicants' claimed method. Thus, the Examiner cited Wilson for a disclosure of removing the dental article form from the dental article; however, Wilson does not teach that the dental article form that is self-supporting and malleable. Thus, it is respectfully submitted that there is no motivation to combine the cited four documents.

Even if there were such motivation to combine these four documents, one skilled in the art would have no reasonable expectation whatsoever that the disclosure of Simor combined with the disclosures of Neustadter et al. and Ivanov et al. and Wilson would necessarily provide the method recited in claim 39. Withdrawal of this rejection is respectfully requested.

It is submitted that these rejections (particularly the latter rejection of the method claims where four documents are needed to make the rejection) may only be made by impermissible hindsight reconstruction, that is, by picking and choosing from each document that which supports these rejections. One cannot "simply [to] engage in a hindsight reconstruction of the claimed invention, using the Applicant's structure as a template and selecting elements from references to fill the gaps." *In re Gorman*, 933 F2d 982, 18 U.S.P.Q.2d 1885, 1888 (Fed. Cir. 1991). Applicants respectfully submit that these rejections could only have been made by means of impermissible hindsight reconstruction.

As recently reasserted in *Princeton Biochemicals, Inc. v. Beckman Coulter, Inc.* (Fed. Cir., No. 04-1493, June 9, 2005), 35 U.S.C. §103 specifically requires an assessment of the claimed invention "as a whole." This "as a whole" assessment of the invention requires a showing that an artisan of ordinary skill in the art at the time of invention, confronted by the same problems as the inventor and with no knowledge of the claimed invention, would have selected the various elements from the cited references and combined them in the claimed manner. In other words, 35 U.S.C. §103 requires some suggestion or motivation, before the invention itself, to make the new combination. See *In re Rouffet*, 149 F.3d 1350, 1355-56 (Fed. Cir. 1998).

This "as a whole" instruction in 35 U.S. §103 prevents evaluation of the invention part by part. Without this important requirement, an obviousness assessment might successfully break an invention into its component parts, then find a reference corresponding to each component. This line of reasoning would import hindsight into the obviousness determination by using the invention as a roadmap to find its prior art components. Further, this improper method would

discount the value of combining various existing features or principles in a new way to achieve a new result - often the essence of invention. Ruiz v. A.B. Chance Co., 357 F.3d 1270, 1275 (Fed. Cir. 2004). Simply identifying the various elements of a claim in the cited references does not render a claim obvious. Ruiz, 357 F.3d at 1275. Instead, 35 U.S. §103 requires some suggestion or motivation in the prior art to make the new combination. Rouffet, 149 F.3d at 1355-56. Applicants submit that the Examiner has engaged in an improper part by part analysis of the claimed invention. Withdrawal of each of these rejections is respectfully requested.

The Examiner rejected claims 1-9, 11-39, and 42-44 under 35 U.S.C. §103(a) as being unpatentable over Karim et al. (U.S. Patent Publication No. 2003/0114553) in view of Neustadter et al. (U.S. Patent No. 3,565,387). This rejection is respectfully traversed.

It is respectfully submitted that the present application and the invention of Karim et al., as described in U.S. Patent Publication No. 2003/0114553, were, at the time the present invention was made, owned by 3M Intellectual Property Co.

Withdrawal of this rejection is respectfully requested.

Summary

It is respectfully submitted that the pending claims 1-9, 11-39, and 42-44 are in condition for allowance and notification to that effect is respectfully requested. The Examiner is invited to contact Applicants' Representatives, at the below-listed telephone number, if it is believed that prosecution of this application may be assisted thereby.

Respectfully submitted
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CERTIFICATE UNDER 37 CFR §1.10:

"Express Mail" mailing label number: EV 201 891 750 US

Date of Deposit: 13 September 2006

I hereby certify that the Transmittal Letter and the paper(s) and/or fee(s), as described hereinabove, are being deposited with the United States Postal Service "Express Mail Post Office to Addressee" service under 37 CFR §1.10 on the date indicated above and is addressed to: **Mail Stop Amendment**, Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450

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Amendment and Response Under 37 C.F.R. §1.116 - Expedited Examining Procedure
Serial No.: 10/643,748
Confirmation No.: 4133
Filed: 19 August 2003
For: DENTAL ARTICLE FORMS AND METHODS

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ATTACHMENT - REPLACEMENT SHEET

**Serial No.: 10/643,748
Docket No.: 58614US002**

Pursuant to 37 C.F.R. §1.121(d), attached are replacement Figure 1 and
new Figures 2-5.